Step 3 Template

Christine Hathaway

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### Data Importing and cleaning

Importing the data from 4 data sets:

employer\_coverage <- read.csv('employer\_coverage\_data.csv', header = TRUE, na.strings = c(""), stringsAsFactors = FALSE)  
individual\_market <- read.csv('individual\_market\_coverage\_data.csv', header = TRUE, na.strings = c(""), stringsAsFactors = FALSE)  
medicare <- read.csv('medicare\_data.csv', header = TRUE, na.strings = c(""), stringsAsFactors = FALSE)  
states <- read.csv('states.csv', header = TRUE, na.strings = c(""), stringsAsFactors = FALSE)

I will analzye each data set indiviually.

First, the employer\_coverage file

Look at the class:

class(employer\_coverage)

## [1] "data.frame"

Look at the dimensions, or number and rows of each column:

dim(employer\_coverage)

## [1] 51 24

Look at the column names

names(employer\_coverage)

## [1] "state"   
## [2] "people\_with\_employer\_coverage\_2015"   
## [3] "gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013"   
## [4] "total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010"  
## [5] "children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010"   
## [6] "adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010"   
## [7] "adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010"   
## [8] "total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015"   
## [9] "kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015"   
## [10] "males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015"   
## [11] "females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015"   
## [12] "avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010"   
## [13] "avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015"   
## [14] "family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015"   
## [15] "family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016"   
## [16] "total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012"   
## [17] "total\_group\_market\_rebates\_2012"   
## [18] "total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013"   
## [19] "total\_group\_market\_rebates\_2013"   
## [20] "total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014"   
## [21] "total\_group\_market\_rebates\_2014"   
## [22] "total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015"   
## [23] "total\_group\_market\_rebates\_2015"   
## [24] "total\_group\_market\_rebates\_2012\_2015"

Look at the structure

str(employer\_coverage)

## 'data.frame': 51 obs. of 24 variables:  
## $ state : chr "Alabama " "Alaska " "Arizona " "Arkansas " ...  
## $ people\_with\_employer\_coverage\_2015 : int 2545000 390000 3288000 1365000 19552000 2949000 2148000 564000 388000 8847000 ...  
## $ gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013 : int 35000 6000 50000 21000 294000 40000 25000 7000 6000 132000 ...  
## $ total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010: int 1566000 237000 2091000 865000 12092000 1902000 1386000 320000 208000 5587000 ...  
## $ children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010 : int 396000 64000 570000 219000 3255000 521000 367000 86000 34000 1411000 ...  
## $ adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010 : int 561000 87000 752000 313000 4389000 685000 494000 113000 83000 2006000 ...  
## $ adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010 : int 609000 86000 769000 333000 4448000 696000 525000 121000 91000 2170000 ...  
## $ total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 : int 2140837 316518 2726206 1102338 15867909 2519638 1819938 417265 281235 7289873 ...  
## $ kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 : int 422895 66269 598585 225176 3351780 556491 364693 84080 39399 1423940 ...  
## $ males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 : int 831232 126100 1066492 430226 6191627 972911 708801 161610 114305 2841807 ...  
## $ females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 : int 886709 124149 1061129 446936 6324503 990235 746444 171575 127531 3024126 ...  
## $ avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010 : num 7.1 NA 7.4 6.4 8.3 7 7.4 NA NA 8.2 ...  
## $ avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015 : num 5.2 8.2 4.2 3.8 5.5 4.8 4.2 5.2 4.7 1.3 ...  
## $ family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015 : int 1500 NA 2900 1900 2500 1900 3000 NA NA 6300 ...  
## $ family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016 : int 2200 NA 3800 2400 3600 2600 4000 NA NA 7600 ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012 : int 0 1845 341797 110844 1088504 112067 21613 2186 209593 297061 ...  
## $ total\_group\_market\_rebates\_2012 : int 0 708637 16179486 2629919 47272420 10189712 4266585 727951 5064210 14794868 ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013 : int 0 0 256536 44206 422403 14926 31734 3176 164023 622688 ...  
## $ total\_group\_market\_rebates\_2013 : int 0 0 8248311 4519181 8696667 1474433 2638239 242249 11151522 23692538 ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014 : int 0 0 238461 40087 230786 97387 22166 12110 41340 592343 ...  
## $ total\_group\_market\_rebates\_2014 : int 0 0 8301175 5143882 32235960 4918285 1834954 1470435 14488017 33422223 ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015 : int 0 0 11492 44160 287077 5320 0 3805 252618 615309 ...  
## $ total\_group\_market\_rebates\_2015 : int 0 0 4142421 3101489 36705696 1588937 0 151507 18040941 37373499 ...  
## $ total\_group\_market\_rebates\_2012\_2015 : int 0 708637 36871393 15394471 124910743 18171367 8739778 2592142 48744690 109283128 ...

Use glimpse to view structure

glimpse(employer\_coverage)

## Observations: 51  
## Variables: 24  
## $ state <chr> ...  
## $ people\_with\_employer\_coverage\_2015 <int> ...  
## $ gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013 <int> ...  
## $ total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010 <int> ...  
## $ children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010 <int> ...  
## $ adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010 <int> ...  
## $ adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010 <int> ...  
## $ total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 <int> ...  
## $ kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 <int> ...  
## $ males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 <int> ...  
## $ females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015 <int> ...  
## $ avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010 <dbl> ...  
## $ avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015 <dbl> ...  
## $ family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015 <int> ...  
## $ family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016 <int> ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012 <int> ...  
## $ total\_group\_market\_rebates\_2012 <int> ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013 <int> ...  
## $ total\_group\_market\_rebates\_2013 <int> ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014 <int> ...  
## $ total\_group\_market\_rebates\_2014 <int> ...  
## $ total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015 <int> ...  
## $ total\_group\_market\_rebates\_2015 <int> ...  
## $ total\_group\_market\_rebates\_2012\_2015 <int> ...

Look at a summary of the file

summary(employer\_coverage)

## state people\_with\_employer\_coverage\_2015  
## Length:51 Min. : 335000   
## Class :character 1st Qu.: 875500   
## Mode :character Median : 2295000   
## Mean : 3378275   
## 3rd Qu.: 4109000   
## Max. :19552000   
##   
## gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013  
## Min. : 4000   
## 1st Qu.: 11500   
## Median : 31000   
## Mean : 45314   
## 3rd Qu.: 51000   
## Max. :294000   
##   
## total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010  
## Min. : 196000   
## 1st Qu.: 560500   
## Median : 1411000   
## Mean : 2062039   
## 3rd Qu.: 2473500   
## Max. :12092000   
##   
## children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## Min. : 34000   
## 1st Qu.: 147500   
## Median : 385000   
## Mean : 545627   
## 3rd Qu.: 624000   
## Max. :3255000   
##   
## adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## Min. : 73000   
## 1st Qu.: 196000   
## Median : 494000   
## Mean : 741235   
## 3rd Qu.: 911000   
## Max. :4389000   
##   
## adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## Min. : 69000   
## 1st Qu.: 210500   
## Median : 529000   
## Mean : 775176   
## 3rd Qu.: 956000   
## Max. :4448000   
##   
## total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## Min. : 267259   
## 1st Qu.: 717588   
## Median : 1819938   
## Mean : 2699373   
## 3rd Qu.: 3239230   
## Max. :15867909   
##   
## kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## Min. : 39399   
## 1st Qu.: 151910   
## Median : 378519   
## Mean : 559093   
## 3rd Qu.: 641051   
## Max. :3351780   
##   
## males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## Min. : 107459   
## 1st Qu.: 275627   
## Median : 708801   
## Mean :1049488   
## 3rd Qu.:1278347   
## Max. :6191627   
##   
## females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## Min. : 101204   
## 1st Qu.: 295553   
## Median : 746444   
## Mean :1090792   
## 3rd Qu.:1335298   
## Max. :6324503   
##   
## avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010  
## Min. :6.400   
## 1st Qu.:6.975   
## Median :7.300   
## Mean :7.315   
## 3rd Qu.:7.600   
## Max. :8.700   
## NA's :11   
## avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015  
## Min. :1.300   
## 1st Qu.:4.150   
## Median :4.800   
## Mean :4.757   
## 3rd Qu.:5.350   
## Max. :8.200   
##   
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015  
## Min. : 700   
## 1st Qu.:1675   
## Median :2200   
## Mean :2405   
## 3rd Qu.:2925   
## Max. :6300   
## NA's :11   
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016  
## Min. :1300   
## 1st Qu.:2400   
## Median :3000   
## Mean :3252   
## 3rd Qu.:3825   
## Max. :7600   
## NA's :11   
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012  
## Min. : 0   
## 1st Qu.: 4703   
## Median : 39589   
## Mean : 111608   
## 3rd Qu.: 116141   
## Max. :1088504   
##   
## total\_group\_market\_rebates\_2012  
## Min. : 0   
## 1st Qu.: 476407   
## Median : 2085935   
## Mean : 5999343   
## 3rd Qu.: 7973001   
## Max. :47272420   
##   
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013  
## Min. : 0   
## 1st Qu.: 2391   
## Median : 40084   
## Mean : 90148   
## 3rd Qu.:107129   
## Max. :622688   
##   
## total\_group\_market\_rebates\_2013  
## Min. : 0   
## 1st Qu.: 615389   
## Median : 1870997   
## Mean : 3877621   
## 3rd Qu.: 5616724   
## Max. :23692538   
##   
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014  
## Min. : 0   
## 1st Qu.: 369   
## Median : 22166   
## Mean : 66525   
## 3rd Qu.: 63436   
## Max. :592343   
##   
## total\_group\_market\_rebates\_2014  
## Min. : 0   
## 1st Qu.: 118022   
## Median : 1303715   
## Mean : 4532062   
## 3rd Qu.: 5667170   
## Max. :33422223   
##   
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015  
## Min. : 0   
## 1st Qu.: 0   
## Median : 3935   
## Mean : 71805   
## 3rd Qu.: 46698   
## Max. :615309   
##   
## total\_group\_market\_rebates\_2015 total\_group\_market\_rebates\_2012\_2015  
## Min. : 0 Min. : 0   
## 1st Qu.: 0 1st Qu.: 2115932   
## Median : 737553 Median : 6366291   
## Mean : 5673020 Mean : 20082046   
## 3rd Qu.: 5182249 3rd Qu.: 24409237   
## Max. :45189590 Max. :124910743   
##

Look at the head and tail of the file:

head(employer\_coverage)

## state people\_with\_employer\_coverage\_2015  
## 1 Alabama 2545000  
## 2 Alaska 390000  
## 3 Arizona 3288000  
## 4 Arkansas 1365000  
## 5 California 19552000  
## 6 Colorado 2949000  
## gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013  
## 1 35000  
## 2 6000  
## 3 50000  
## 4 21000  
## 5 294000  
## 6 40000  
## total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010  
## 1 1566000  
## 2 237000  
## 3 2091000  
## 4 865000  
## 5 12092000  
## 6 1902000  
## children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 1 396000  
## 2 64000  
## 3 570000  
## 4 219000  
## 5 3255000  
## 6 521000  
## adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 1 561000  
## 2 87000  
## 3 752000  
## 4 313000  
## 5 4389000  
## 6 685000  
## adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 1 609000  
## 2 86000  
## 3 769000  
## 4 333000  
## 5 4448000  
## 6 696000  
## total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 2140837  
## 2 316518  
## 3 2726206  
## 4 1102338  
## 5 15867909  
## 6 2519638  
## kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 422895  
## 2 66269  
## 3 598585  
## 4 225176  
## 5 3351780  
## 6 556491  
## males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 831232  
## 2 126100  
## 3 1066492  
## 4 430226  
## 5 6191627  
## 6 972911  
## females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 886709  
## 2 124149  
## 3 1061129  
## 4 446936  
## 5 6324503  
## 6 990235  
## avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010  
## 1 7.1  
## 2 NA  
## 3 7.4  
## 4 6.4  
## 5 8.3  
## 6 7.0  
## avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015  
## 1 5.2  
## 2 8.2  
## 3 4.2  
## 4 3.8  
## 5 5.5  
## 6 4.8  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015  
## 1 1500  
## 2 NA  
## 3 2900  
## 4 1900  
## 5 2500  
## 6 1900  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016  
## 1 2200  
## 2 NA  
## 3 3800  
## 4 2400  
## 5 3600  
## 6 2600  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012  
## 1 0  
## 2 1845  
## 3 341797  
## 4 110844  
## 5 1088504  
## 6 112067  
## total\_group\_market\_rebates\_2012  
## 1 0  
## 2 708637  
## 3 16179486  
## 4 2629919  
## 5 47272420  
## 6 10189712  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013  
## 1 0  
## 2 0  
## 3 256536  
## 4 44206  
## 5 422403  
## 6 14926  
## total\_group\_market\_rebates\_2013  
## 1 0  
## 2 0  
## 3 8248311  
## 4 4519181  
## 5 8696667  
## 6 1474433  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014  
## 1 0  
## 2 0  
## 3 238461  
## 4 40087  
## 5 230786  
## 6 97387  
## total\_group\_market\_rebates\_2014  
## 1 0  
## 2 0  
## 3 8301175  
## 4 5143882  
## 5 32235960  
## 6 4918285  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015  
## 1 0  
## 2 0  
## 3 11492  
## 4 44160  
## 5 287077  
## 6 5320  
## total\_group\_market\_rebates\_2015 total\_group\_market\_rebates\_2012\_2015  
## 1 0 0  
## 2 0 708637  
## 3 4142421 36871393  
## 4 3101489 15394471  
## 5 36705696 124910743  
## 6 1588937 18171367

tail(employer\_coverage)

## state people\_with\_employer\_coverage\_2015  
## 46 Vermont 345000  
## 47 Virginia 4850000  
## 48 Washington 3986000  
## 49 West Virginia 976000  
## 50 Wisconsin 3521000  
## 51 Wyoming 335000  
## gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013  
## 46 5000  
## 47 59000  
## 48 50000  
## 49 12000  
## 50 41000  
## 51 4000  
## total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010  
## 46 215000  
## 47 2974000  
## 48 2427000  
## 49 581000  
## 50 2142000  
## 51 196000  
## children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 46 46000  
## 47 817000  
## 48 580000  
## 49 147000  
## 50 580000  
## 51 54000  
## adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 46 82000  
## 47 1036000  
## 48 910000  
## 49 215000  
## 50 771000  
## 51 73000  
## adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 46 87000  
## 47 1121000  
## 48 937000  
## 49 219000  
## 50 791000  
## 51 69000  
## total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 46 285858  
## 47 3902716  
## 48 3079369  
## 49 772905  
## 50 2804258  
## 51 267259  
## kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 46 47185  
## 47 847534  
## 48 596597  
## 49 152226  
## 50 573028  
## 51 58596  
## males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 46 115781  
## 47 1467520  
## 48 1224572  
## 49 304602  
## 50 1107770  
## 51 107459  
## females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 46 122892  
## 47 1587663  
## 48 1258201  
## 49 316077  
## 50 1123460  
## 51 101204  
## avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010  
## 46 NA  
## 47 7.6  
## 48 8.1  
## 49 7.6  
## 50 7.4  
## 51 NA  
## avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015  
## 46 5.6  
## 47 4.8  
## 48 3.2  
## 49 5.2  
## 50 4.0  
## 51 4.1  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015  
## 46 NA  
## 47 2500  
## 48 4300  
## 49 2100  
## 50 3100  
## 51 NA  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016  
## 46 NA  
## 47 3400  
## 48 5500  
## 49 3000  
## 50 4100  
## 51 NA  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012  
## 46 5248  
## 47 216242  
## 48 381  
## 49 1954  
## 50 99129  
## 51 3049  
## total\_group\_market\_rebates\_2012  
## 46 126810  
## 47 10272687  
## 48 20550  
## 49 271978  
## 50 2802562  
## 51 1275555  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013  
## 46 0  
## 47 69062  
## 48 0  
## 49 1186  
## 50 0  
## 51 2120  
## total\_group\_market\_rebates\_2013  
## 46 0  
## 47 8085302  
## 48 0  
## 49 285783  
## 50 0  
## 51 795143  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014  
## 46 0  
## 47 163018  
## 48 31694  
## 49 457  
## 50 2033  
## 51 484  
## total\_group\_market\_rebates\_2014  
## 46 0  
## 47 10625792  
## 48 129860  
## 49 106185  
## 50 201289  
## 51 266734  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015  
## 46 0  
## 47 246593  
## 48 2897  
## 49 7055  
## 50 0  
## 51 0  
## total\_group\_market\_rebates\_2015 total\_group\_market\_rebates\_2012\_2015  
## 46 0 126810  
## 47 15982185 44965966  
## 48 441587 591997  
## 49 737553 1401499  
## 50 0 3003851  
## 51 0 2337432

Search for missing data:

sum(is.na((employer\_coverage)))

## [1] 33

Next, the individual\_market file

Look at the class:

class(individual\_market)

## [1] "data.frame"

Look at the dimensions, or number and rows of each column:

dim(individual\_market)

## [1] 51 13

Look at the column names

names(individual\_market)

## [1] "state"   
## [2] "individuals\_with\_pre\_existing\_condition\_2009"   
## [3] "individuals\_selecting\_a\_marketplace\_plan\_2016"   
## [4] "individuals\_with\_marketplace\_coverage\_q1\_2016"   
## [5] "individuals\_receiving\_tax\_credits\_q1\_2016"   
## [6] "avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016"   
## [7] "individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016"   
## [8] "average\_number\_of\_marketplace\_plans\_available\_2017"   
## [9] "marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017"   
## [10] "marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017"   
## [11] "purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016"  
## [12] "rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014"   
## [13] "insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016"

Look at the structure

str(individual\_market)

## 'data.frame': 51 obs. of 13 variables:  
## $ state : chr "Alabama " "Alaska " "Arizona " "Arkansas " ...  
## $ individuals\_with\_pre\_existing\_condition\_2009 : int 2040458 318926 2794358 1239180 16133192 2250003 1554628 383607 268134 7838642 ...  
## $ individuals\_selecting\_a\_marketplace\_plan\_2016 : int 195055 23029 203066 73648 1575340 150769 116019 28256 22693 1742819 ...  
## $ individuals\_with\_marketplace\_coverage\_q1\_2016 : int 165534 17995 179445 63357 1415428 108311 102917 25379 17666 1531714 ...  
## $ individuals\_receiving\_tax\_credits\_q1\_2016 : int 152206 16205 124346 56843 1239893 67062 80759 21467 1224 1428712 ...  
## $ avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016 : int 310 750 230 306 309 318 357 330 183 305 ...  
## $ individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016 : int 125424 7500 94463 36134 707671 28929 52132 11146 279 1125850 ...  
## $ average\_number\_of\_marketplace\_plans\_available\_2017 : int 6 5 4 24 30 NA 17 19 18 55 ...  
## $ marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017 : num 0.89 0.79 0.74 0.52 NA NA NA 0.55 NA 0.8 ...  
## $ marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017 : num 0.9 0.82 0.78 0.62 NA NA NA 0.63 NA 0.84 ...  
## $ purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016: int 33000 5000 33000 29000 313000 52000 15000 5000 2000 153000 ...  
## $ rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014 : num 1000000 NA 4179000 9187892 11697197 ...  
## $ insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016: num NA 629841 NA NA 1844585 ...

Use glimpse to view structure

glimpse(individual\_market)

## Observations: 51  
## Variables: 13  
## $ state <chr> "...  
## $ individuals\_with\_pre\_existing\_condition\_2009 <int> 2...  
## $ individuals\_selecting\_a\_marketplace\_plan\_2016 <int> 1...  
## $ individuals\_with\_marketplace\_coverage\_q1\_2016 <int> 1...  
## $ individuals\_receiving\_tax\_credits\_q1\_2016 <int> 1...  
## $ avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016 <int> 3...  
## $ individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016 <int> 1...  
## $ average\_number\_of\_marketplace\_plans\_available\_2017 <int> 6...  
## $ marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017 <dbl> 0...  
## $ marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017 <dbl> 0...  
## $ purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016 <int> 3...  
## $ rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014 <dbl> 1...  
## $ insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016 <dbl> N...

Look at a summary of the file

summary(individual\_market)

## state individuals\_with\_pre\_existing\_condition\_2009  
## Length:51 Min. : 241133   
## Class :character 1st Qu.: 715098   
## Mode :character Median : 1894874   
## Mean : 2626197   
## 3rd Qu.: 2950404   
## Max. :16133192   
##   
## individuals\_selecting\_a\_marketplace\_plan\_2016  
## Min. : 14564   
## 1st Qu.: 56649   
## Median : 147109   
## Mean : 248664   
## 3rd Qu.: 256291   
## Max. :1742819   
##   
## individuals\_with\_marketplace\_coverage\_q1\_2016  
## Min. : 13313   
## 1st Qu.: 50436   
## Median : 130178   
## Mean : 217281   
## 3rd Qu.: 224111   
## Max. :1531714   
##   
## individuals\_receiving\_tax\_credits\_q1\_2016  
## Min. : 1224   
## 1st Qu.: 43343   
## Median : 95507   
## Mean : 184110   
## 3rd Qu.: 188444   
## Max. :1428712   
##   
## avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016  
## Min. :178.0   
## 1st Qu.:249.0   
## Median :291.0   
## Mean :292.2   
## 3rd Qu.:311.0   
## Max. :750.0   
##   
## individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016  
## Min. : 279   
## 1st Qu.: 23067   
## Median : 58781   
## Mean : 124579   
## 3rd Qu.: 130999   
## Max. :1125850   
##   
## average\_number\_of\_marketplace\_plans\_available\_2017  
## Min. : 4.00   
## 1st Qu.:15.00   
## Median :20.00   
## Mean :24.47   
## 3rd Qu.:29.00   
## Max. :71.00   
## NA's :6   
## marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017  
## Min. :0.4200   
## 1st Qu.:0.6075   
## Median :0.7050   
## Mean :0.6842   
## 3rd Qu.:0.7700   
## Max. :0.8900   
## NA's :13   
## marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017  
## Min. :0.4900   
## 1st Qu.:0.6825   
## Median :0.7550   
## Mean :0.7389   
## 3rd Qu.:0.8200   
## Max. :0.9000   
## NA's :13   
## purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016  
## Min. : 1000   
## 1st Qu.: 14500   
## Median : 31000   
## Mean : 48804   
## 3rd Qu.: 56000   
## Max. :313000   
##   
## rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014  
## Min. : 1000000   
## 1st Qu.: 4000692   
## Median : 5319441   
## Mean : 5612491   
## 3rd Qu.: 8335744   
## Max. :11697197   
## NA's :7   
## insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016  
## Min. : 249070   
## 1st Qu.:1046553   
## Median :1152710   
## Mean :1110741   
## 3rd Qu.:1245183   
## Max. :1844585   
## NA's :28

Look at the head and tail of the file:

head(individual\_market)

## state individuals\_with\_pre\_existing\_condition\_2009  
## 1 Alabama 2040458  
## 2 Alaska 318926  
## 3 Arizona 2794358  
## 4 Arkansas 1239180  
## 5 California 16133192  
## 6 Colorado 2250003  
## individuals\_selecting\_a\_marketplace\_plan\_2016  
## 1 195055  
## 2 23029  
## 3 203066  
## 4 73648  
## 5 1575340  
## 6 150769  
## individuals\_with\_marketplace\_coverage\_q1\_2016  
## 1 165534  
## 2 17995  
## 3 179445  
## 4 63357  
## 5 1415428  
## 6 108311  
## individuals\_receiving\_tax\_credits\_q1\_2016  
## 1 152206  
## 2 16205  
## 3 124346  
## 4 56843  
## 5 1239893  
## 6 67062  
## avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016  
## 1 310  
## 2 750  
## 3 230  
## 4 306  
## 5 309  
## 6 318  
## individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016  
## 1 125424  
## 2 7500  
## 3 94463  
## 4 36134  
## 5 707671  
## 6 28929  
## average\_number\_of\_marketplace\_plans\_available\_2017  
## 1 6  
## 2 5  
## 3 4  
## 4 24  
## 5 30  
## 6 NA  
## marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017  
## 1 0.89  
## 2 0.79  
## 3 0.74  
## 4 0.52  
## 5 NA  
## 6 NA  
## marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017  
## 1 0.90  
## 2 0.82  
## 3 0.78  
## 4 0.62  
## 5 NA  
## 6 NA  
## purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016  
## 1 33000  
## 2 5000  
## 3 33000  
## 4 29000  
## 5 313000  
## 6 52000  
## rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014  
## 1 1000000  
## 2 NA  
## 3 4179000  
## 4 9187892  
## 5 11697197  
## 6 8580311  
## insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016  
## 1 NA  
## 2 629841  
## 3 NA  
## 4 NA  
## 5 1844585  
## 6 1328508

tail(individual\_market)

## state individuals\_with\_pre\_existing\_condition\_2009  
## 46 Vermont 280727  
## 47 Virginia 3491076  
## 48 Washington 2969739  
## 49 West Virginia 799920  
## 50 Wisconsin 2489279  
## 51 Wyoming 241133  
## individuals\_selecting\_a\_marketplace\_plan\_2016  
## 46 29440  
## 47 421897  
## 48 200691  
## 49 37284  
## 50 239034  
## 51 23770  
## individuals\_with\_marketplace\_coverage\_q1\_2016  
## 46 27883  
## 47 378838  
## 48 158245  
## 49 33235  
## 50 224208  
## 51 22076  
## individuals\_receiving\_tax\_credits\_q1\_2016  
## 46 19575  
## 47 319068  
## 48 110476  
## 49 29163  
## 50 190542  
## 51 20313  
## avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016  
## 46 300  
## 47 276  
## 48 238  
## 49 388  
## 50 332  
## 51 459  
## individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016  
## 46 9751  
## 47 222233  
## 48 66083  
## 49 17414  
## 50 123307  
## 51 12235  
## average\_number\_of\_marketplace\_plans\_available\_2017  
## 46 NA  
## 47 34  
## 48 NA  
## 49 13  
## 50 44  
## 51 28  
## marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017  
## 46 NA  
## 47 0.67  
## 48 NA  
## 49 0.63  
## 50 0.63  
## 51 0.68  
## marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017  
## 46 NA  
## 47 0.73  
## 48 NA  
## 49 0.69  
## 50 0.69  
## 51 0.74  
## purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016  
## 46 1000  
## 47 56000  
## 48 53000  
## 49 15000  
## 50 51000  
## 51 5000  
## rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014  
## 46 5983045  
## 47 1000000  
## 48 5586169  
## 49 4000000  
## 50 6137844  
## 51 NA  
## insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016  
## 46 NA  
## 47 NA  
## 48 528441  
## 49 NA  
## 50 NA  
## 51 NA

Search for missing data:

sum(is.na((individual\_market)))

## [1] 67

Next, the medicare file

Look at the class:

class(medicare)

## [1] "data.frame"

Look at the dimensions, or number and rows of each column:

dim(medicare)

## [1] 51 10

Look at the column names

names(medicare)

## [1] "state"   
## [2] "medicare\_enrollment\_sept\_2016"   
## [3] "medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015"   
## [4] "total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015"   
## [5] "average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015"   
## [6] "part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015"   
## [7] "share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015"   
## [8] "change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015"  
## [9] "avoided\_readmissions\_2015"   
## [10] "number\_of\_accountable\_care\_organizations\_2016"

Look at the structure

str(medicare)

## 'data.frame': 51 obs. of 10 variables:  
## $ state : chr "Alabama " "Alaska " "Arizona " "Arkansas " ...  
## $ medicare\_enrollment\_sept\_2016 : int 989855 88966 1175624 606146 5829777 820234 644136 186835 90492 4149593 ...  
## $ medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015 : int 90556 3094 96954 40658 419078 59459 66843 24223 3258 355360 ...  
## $ total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015 : int 97330073 3184420 93694466 36436080 437630655 58449048 78487237 28586178 3496014 350888326 ...  
## $ average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015 : int 1075 1029 966 896 1044 983 1174 1180 1073 987 ...  
## $ part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015 : int 531567 46876 481230 337214 2202117 323128 344091 133283 46684 1826053 ...  
## $ share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015 : num 0.742 0.587 0.703 0.712 0.685 0.676 0.773 0.808 0.675 0.752 ...  
## $ change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015: num -5.8 -5.5 -10.8 -6.2 -5.7 -9.2 -7.7 -10.3 -7.5 -2.7 ...  
## $ avoided\_readmissions\_2015 : num 1503.1 78.3 2270.1 993.5 5580.2 ...  
## $ number\_of\_accountable\_care\_organizations\_2016 : int 9 1 10 11 29 7 12 7 8 49 ...

Use glimpse to view structure

glimpse(medicare)

## Observations: 51  
## Variables: 10  
## $ state <chr> ...  
## $ medicare\_enrollment\_sept\_2016 <int> ...  
## $ medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015 <int> ...  
## $ total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015 <int> ...  
## $ average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015 <int> ...  
## $ part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015 <int> ...  
## $ share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015 <dbl> ...  
## $ change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015 <dbl> ...  
## $ avoided\_readmissions\_2015 <dbl> ...  
## $ number\_of\_accountable\_care\_organizations\_2016 <int> ...

Look at a summary of the file

summary(medicare)

## state medicare\_enrollment\_sept\_2016  
## Length:51 Min. : 88966   
## Class :character 1st Qu.: 318978   
## Mode :character Median : 817272   
## Mean :1095961   
## 3rd Qu.:1259598   
## Max. :5829777   
## medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015  
## Min. : 3094   
## 1st Qu.: 23993   
## Median : 66843   
## Mean : 98965   
## 3rd Qu.:114566   
## Max. :419078   
## total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015  
## Min. : 3184420   
## 1st Qu.: 27390737   
## Median : 72072204   
## Mean :104564282   
## 3rd Qu.:112771588   
## Max. :437630655   
## average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015  
## Min. : 873.0   
## 1st Qu.: 959.5   
## Median :1015.0   
## Mean :1026.8   
## 3rd Qu.:1074.0   
## Max. :1264.0   
## part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## Min. : 46684   
## 1st Qu.: 161287   
## Median : 370648   
## Mean : 520027   
## 3rd Qu.: 681370   
## Max. :2202117   
## share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## Min. :0.5870   
## 1st Qu.:0.6845   
## Median :0.7240   
## Mean :0.7168   
## 3rd Qu.:0.7475   
## Max. :0.8080   
## change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015  
## Min. :-13.400   
## 1st Qu.: -9.400   
## Median : -7.100   
## Mean : -7.186   
## 3rd Qu.: -5.800   
## Max. : 0.700   
## avoided\_readmissions\_2015 number\_of\_accountable\_care\_organizations\_2016  
## Min. : -21.0 Min. : 0.00   
## 1st Qu.: 416.4 1st Qu.: 6.00   
## Median :1372.7 Median :10.00   
## Mean :1932.5 Mean :13.43   
## 3rd Qu.:2418.3 3rd Qu.:19.50   
## Max. :8407.4 Max. :49.00

Look at the head and tail of the file:

head(medicare)

## state medicare\_enrollment\_sept\_2016  
## 1 Alabama 989855  
## 2 Alaska 88966  
## 3 Arizona 1175624  
## 4 Arkansas 606146  
## 5 California 5829777  
## 6 Colorado 820234  
## medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015  
## 1 90556  
## 2 3094  
## 3 96954  
## 4 40658  
## 5 419078  
## 6 59459  
## total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015  
## 1 97330073  
## 2 3184420  
## 3 93694466  
## 4 36436080  
## 5 437630655  
## 6 58449048  
## average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015  
## 1 1075  
## 2 1029  
## 3 966  
## 4 896  
## 5 1044  
## 6 983  
## part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 1 531567  
## 2 46876  
## 3 481230  
## 4 337214  
## 5 2202117  
## 6 323128  
## share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 1 0.742  
## 2 0.587  
## 3 0.703  
## 4 0.712  
## 5 0.685  
## 6 0.676  
## change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015  
## 1 -5.8  
## 2 -5.5  
## 3 -10.8  
## 4 -6.2  
## 5 -5.7  
## 6 -9.2  
## avoided\_readmissions\_2015 number\_of\_accountable\_care\_organizations\_2016  
## 1 1503.120 9  
## 2 78.330 1  
## 3 2270.126 10  
## 4 993.474 11  
## 5 5580.208 29  
## 6 1098.724 7

tail(medicare)

## state medicare\_enrollment\_sept\_2016  
## 46 Vermont 136021  
## 47 Virginia 1392261  
## 48 Washington 1238649  
## 49 West Virginia 423500  
## 50 Wisconsin 1084854  
## 51 Wyoming 99128  
## medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015  
## 46 10955  
## 47 114138  
## 48 74902  
## 49 45280  
## 50 90303  
## 51 8008  
## total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015  
## 46 12077364  
## 47 115809752  
## 48 73272041  
## 49 54194138  
## 50 93517959  
## 51 7634708  
## average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015  
## 46 1102  
## 47 1015  
## 48 978  
## 49 1197  
## 50 1036  
## 51 953  
## part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 46 87184  
## 47 813642  
## 48 543203  
## 49 213916  
## 50 481012  
## 51 56898  
## share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 46 0.728  
## 47 0.762  
## 48 0.681  
## 49 0.707  
## 50 0.751  
## 51 0.621  
## change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015  
## 46 0.7  
## 47 -6.3  
## 48 -7.2  
## 49 -6.5  
## 50 -7.1  
## 51 -6.0  
## avoided\_readmissions\_2015 number\_of\_accountable\_care\_organizations\_2016  
## 46 -21.000 3  
## 47 2301.950 25  
## 48 1388.001 6  
## 49 777.370 11  
## 50 1372.744 13  
## 51 109.538 3

Search for missing data:

sum(is.na((medicare)))

## [1] 0

Last, the states file

Look at the class:

class(states)

## [1] "data.frame"

Look at the dimensions, or number and rows of each column:

dim(states)

## [1] 52 14

Look at the column names

names(states)

## [1] "State"   
## [2] "Uninsured.Rate..2010."   
## [3] "Uninsured.Rate..2015."   
## [4] "Uninsured.Rate.Change..2010.2015."   
## [5] "Health.Insurance.Coverage.Change..2010.2015."  
## [6] "Employer.Health.Insurance.Coverage..2015."   
## [7] "Marketplace.Health.Insurance.Coverage..2016."  
## [8] "Marketplace.Tax.Credits..2016."   
## [9] "Average.Monthly.Tax.Credit..2016."   
## [10] "State.Medicaid.Expansion..2016."   
## [11] "Medicaid.Enrollment..2013."   
## [12] "Medicaid.Enrollment..2016."   
## [13] "Medicaid.Enrollment.Change..2013.2016."   
## [14] "Medicare.Enrollment..2016."

Look at the structure

str(states)

## 'data.frame': 52 obs. of 14 variables:  
## $ State : chr "Alabama " "Alaska " "Arizona " "Arkansas " ...  
## $ Uninsured.Rate..2010. : num 0.146 0.199 0.169 0.175 0.185 0.159 0.091 0.097 0.076 0.213 ...  
## $ Uninsured.Rate..2015. : num 0.101 0.149 0.108 0.095 0.086 0.081 0.06 0.059 0.038 0.133 ...  
## $ Uninsured.Rate.Change..2010.2015. : num -0.045 -0.05 -0.061 -0.08 -0.099 -0.078 -0.031 -0.038 -0.038 -0.08 ...  
## $ Health.Insurance.Coverage.Change..2010.2015.: int 215000 36000 410000 234000 3826000 419000 110000 35000 25000 1597000 ...  
## $ Employer.Health.Insurance.Coverage..2015. : int 2545000 390000 3288000 1365000 19552000 2949000 2148000 564000 388000 8847000 ...  
## $ Marketplace.Health.Insurance.Coverage..2016.: int 165534 17995 179445 63357 1415428 108311 102917 25379 17666 1531714 ...  
## $ Marketplace.Tax.Credits..2016. : int 152206 16205 124346 56843 1239893 67062 80759 21467 1224 1428712 ...  
## $ Average.Monthly.Tax.Credit..2016. : int 310 750 230 306 309 318 357 330 183 305 ...  
## $ State.Medicaid.Expansion..2016. : logi FALSE TRUE TRUE TRUE TRUE TRUE ...  
## $ Medicaid.Enrollment..2013. : int 799176 122334 1201770 556851 7755381 783420 NA 223324 235786 3104996 ...  
## $ Medicaid.Enrollment..2016. : int 910775 166625 1716198 920194 11843081 1375264 761137 236702 255491 3644673 ...  
## $ Medicaid.Enrollment.Change..2013.2016. : int 111599 44291 514428 363343 4087700 591844 NA 13378 19705 539677 ...  
## $ Medicare.Enrollment..2016. : int 989855 88966 1175624 606146 5829777 820234 644136 186835 90492 4149593 ...

Use glimpse to view structure

glimpse(states)

## Observations: 52  
## Variables: 14  
## $ State <chr> "Alabama ", "Alas...  
## $ Uninsured.Rate..2010. <dbl> 0.146, 0.199, 0.1...  
## $ Uninsured.Rate..2015. <dbl> 0.101, 0.149, 0.1...  
## $ Uninsured.Rate.Change..2010.2015. <dbl> -0.045, -0.050, -...  
## $ Health.Insurance.Coverage.Change..2010.2015. <int> 215000, 36000, 41...  
## $ Employer.Health.Insurance.Coverage..2015. <int> 2545000, 390000, ...  
## $ Marketplace.Health.Insurance.Coverage..2016. <int> 165534, 17995, 17...  
## $ Marketplace.Tax.Credits..2016. <int> 152206, 16205, 12...  
## $ Average.Monthly.Tax.Credit..2016. <int> 310, 750, 230, 30...  
## $ State.Medicaid.Expansion..2016. <lgl> FALSE, TRUE, TRUE...  
## $ Medicaid.Enrollment..2013. <int> 799176, 122334, 1...  
## $ Medicaid.Enrollment..2016. <int> 910775, 166625, 1...  
## $ Medicaid.Enrollment.Change..2013.2016. <int> 111599, 44291, 51...  
## $ Medicare.Enrollment..2016. <int> 989855, 88966, 11...

Look at a summary of the file

summary(states)

## State Uninsured.Rate..2010. Uninsured.Rate..2015.  
## Length:52 Min. :0.0440 Min. :0.02800   
## Class :character 1st Qu.:0.1125 1st Qu.:0.06250   
## Mode :character Median :0.1430 Median :0.08650   
## Mean :0.1418 Mean :0.08735   
## 3rd Qu.:0.1735 3rd Qu.:0.10900   
## Max. :0.2370 Max. :0.17100   
##   
## Uninsured.Rate.Change..2010.2015.  
## Min. :-0.10300   
## 1st Qu.:-0.06600   
## Median :-0.04900   
## Mean :-0.05212   
## 3rd Qu.:-0.03875   
## Max. : 0.06100   
##   
## Health.Insurance.Coverage.Change..2010.2015.  
## Min. : 15000   
## 1st Qu.: 97250   
## Median : 224500   
## Mean : 747942   
## 3rd Qu.: 412250   
## Max. :19304000   
##   
## Employer.Health.Insurance.Coverage..2015.  
## Min. : 335000   
## 1st Qu.: 879750   
## Median : 2305500   
## Mean : 6626615   
## 3rd Qu.: 4386500   
## Max. :172292000   
##   
## Marketplace.Health.Insurance.Coverage..2016.  
## Min. : 13313   
## 1st Qu.: 51097   
## Median : 130672   
## Mean : 426205   
## 3rd Qu.: 226082   
## Max. :11081330   
##   
## Marketplace.Tax.Credits..2016. Average.Monthly.Tax.Credit..2016.  
## Min. : 1224 Min. :178.0   
## 1st Qu.: 43717 1st Qu.:249.5   
## Median : 98176 Median :291.0   
## Mean : 361139 Mean :292.1   
## 3rd Qu.: 193684 3rd Qu.:310.5   
## Max. :9389609 Max. :750.0   
##   
## State.Medicaid.Expansion..2016. Medicaid.Enrollment..2013.  
## Mode :logical Min. : 67518   
## FALSE:19 1st Qu.: 289775   
## TRUE :32 Median : 794614   
## NA's :1 Mean : 2255699   
## 3rd Qu.: 1274017   
## Max. :56392477   
## NA's :2   
## Medicaid.Enrollment..2016. Medicaid.Enrollment.Change..2013.2016.  
## Min. : 63583 Min. : -3935   
## 1st Qu.: 309113 1st Qu.: 53979   
## Median : 978052 Median : 234156   
## Mean : 2828190 Mean : 644246   
## 3rd Qu.: 1732724 3rd Qu.: 456249   
## Max. :73532931 Max. :16106157   
## NA's :2   
## Medicare.Enrollment..2016.  
## Min. : 88966   
## 1st Qu.: 320887   
## Median : 818753   
## Mean : 2173923   
## 3rd Qu.: 1298255   
## Max. :57149984   
##

Look at the head and tail of the file:

head(states)

## State Uninsured.Rate..2010. Uninsured.Rate..2015.  
## 1 Alabama 0.146 0.101  
## 2 Alaska 0.199 0.149  
## 3 Arizona 0.169 0.108  
## 4 Arkansas 0.175 0.095  
## 5 California 0.185 0.086  
## 6 Colorado 0.159 0.081  
## Uninsured.Rate.Change..2010.2015.  
## 1 -0.045  
## 2 -0.050  
## 3 -0.061  
## 4 -0.080  
## 5 -0.099  
## 6 -0.078  
## Health.Insurance.Coverage.Change..2010.2015.  
## 1 215000  
## 2 36000  
## 3 410000  
## 4 234000  
## 5 3826000  
## 6 419000  
## Employer.Health.Insurance.Coverage..2015.  
## 1 2545000  
## 2 390000  
## 3 3288000  
## 4 1365000  
## 5 19552000  
## 6 2949000  
## Marketplace.Health.Insurance.Coverage..2016.  
## 1 165534  
## 2 17995  
## 3 179445  
## 4 63357  
## 5 1415428  
## 6 108311  
## Marketplace.Tax.Credits..2016. Average.Monthly.Tax.Credit..2016.  
## 1 152206 310  
## 2 16205 750  
## 3 124346 230  
## 4 56843 306  
## 5 1239893 309  
## 6 67062 318  
## State.Medicaid.Expansion..2016. Medicaid.Enrollment..2013.  
## 1 FALSE 799176  
## 2 TRUE 122334  
## 3 TRUE 1201770  
## 4 TRUE 556851  
## 5 TRUE 7755381  
## 6 TRUE 783420  
## Medicaid.Enrollment..2016. Medicaid.Enrollment.Change..2013.2016.  
## 1 910775 111599  
## 2 166625 44291  
## 3 1716198 514428  
## 4 920194 363343  
## 5 11843081 4087700  
## 6 1375264 591844  
## Medicare.Enrollment..2016.  
## 1 989855  
## 2 88966  
## 3 1175624  
## 4 606146  
## 5 5829777  
## 6 820234

tail(states)

## State Uninsured.Rate..2010. Uninsured.Rate..2015.  
## 47 Virginia 0.131 0.091  
## 48 Washington 0.142 0.066  
## 49 West Virginia 0.146 0.060  
## 50 Wisconsin 0.094 0.057  
## 51 Wyoming 0.149 0.115  
## 52 United States 0.155 0.094  
## Uninsured.Rate.Change..2010.2015.  
## 47 -0.040  
## 48 -0.076  
## 49 -0.086  
## 50 -0.037  
## 51 -0.034  
## 52 0.061  
## Health.Insurance.Coverage.Change..2010.2015.  
## 47 327000  
## 48 537000  
## 49 156000  
## 50 211000  
## 51 20000  
## 52 19304000  
## Employer.Health.Insurance.Coverage..2015.  
## 47 4850000  
## 48 3986000  
## 49 976000  
## 50 3521000  
## 51 335000  
## 52 172292000  
## Marketplace.Health.Insurance.Coverage..2016.  
## 47 378838  
## 48 158245  
## 49 33235  
## 50 224208  
## 51 22076  
## 52 11081330  
## Marketplace.Tax.Credits..2016. Average.Monthly.Tax.Credit..2016.  
## 47 319068 276  
## 48 110476 238  
## 49 29163 388  
## 50 190542 332  
## 51 20313 459  
## 52 9389609 291  
## State.Medicaid.Expansion..2016. Medicaid.Enrollment..2013.  
## 47 FALSE 935434  
## 48 TRUE 1117576  
## 49 TRUE 354544  
## 50 FALSE 985531  
## 51 FALSE 67518  
## 52 NA 56392477  
## Medicaid.Enrollment..2016. Medicaid.Enrollment.Change..2013.2016.  
## 47 988821 53387  
## 48 1788536 670960  
## 49 575645 221101  
## 50 1046897 61366  
## 51 63583 -3935  
## 52 73532931 16106157  
## Medicare.Enrollment..2016.  
## 47 1392261  
## 48 1238649  
## 49 423500  
## 50 1084854  
## 51 99128  
## 52 57149984

Search for missing data:

sum(is.na((states)))

## [1] 5

After looking through the data, some of the files have missing data. I will omit these rows, as I have no way to fill in the missing or incomplete data.

Display rows with missing data

employer\_coverage[!complete.cases(employer\_coverage),]

## state people\_with\_employer\_coverage\_2015  
## 2 Alaska 390000  
## 8 Delaware 564000  
## 9 District of Columbia 388000  
## 12 Hawaii 867000  
## 13 Idaho 836000  
## 20 Maine 702000  
## 27 Montana 510000  
## 29 Nevada 1505000  
## 40 Rhode Island 597000  
## 46 Vermont 345000  
## 51 Wyoming 335000  
## gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013  
## 2 6000  
## 8 7000  
## 9 6000  
## 12 9000  
## 13 11000  
## 20 8000  
## 27 7000  
## 29 19000  
## 40 8000  
## 46 5000  
## 51 4000  
## total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010  
## 2 237000  
## 8 320000  
## 9 208000  
## 12 462000  
## 13 566000  
## 20 431000  
## 27 319000  
## 29 937000  
## 40 374000  
## 46 215000  
## 51 196000  
## children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 2 64000  
## 8 86000  
## 9 34000  
## 12 115000  
## 13 173000  
## 20 103000  
## 27 81000  
## 29 269000  
## 40 89000  
## 46 46000  
## 51 54000  
## adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 2 87000  
## 8 113000  
## 9 83000  
## 12 174000  
## 13 195000  
## 20 156000  
## 27 122000  
## 29 339000  
## 40 138000  
## 46 82000  
## 51 73000  
## adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 2 86000  
## 8 121000  
## 9 91000  
## 12 173000  
## 13 198000  
## 20 172000  
## 27 116000  
## 29 329000  
## 40 147000  
## 46 87000  
## 51 69000  
## total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 2 316518  
## 8 417265  
## 9 281235  
## 12 631152  
## 13 699703  
## 20 588281  
## 27 401717  
## 29 1168797  
## 40 484193  
## 46 285858  
## 51 267259  
## kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 2 66269  
## 8 84080  
## 9 39399  
## 12 120194  
## 13 170463  
## 20 107573  
## 27 83639  
## 29 261378  
## 40 90706  
## 46 47185  
## 51 58596  
## males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 2 126100  
## 8 161610  
## 9 114305  
## 12 254510  
## 13 267497  
## 20 229386  
## 27 157979  
## 29 451754  
## 40 191892  
## 46 115781  
## 51 107459  
## females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 2 124149  
## 8 171575  
## 9 127531  
## 12 256448  
## 13 261743  
## 20 251322  
## 27 160099  
## 29 455665  
## 40 201595  
## 46 122892  
## 51 101204  
## avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010  
## 2 NA  
## 8 NA  
## 9 NA  
## 12 NA  
## 13 NA  
## 20 NA  
## 27 NA  
## 29 NA  
## 40 NA  
## 46 NA  
## 51 NA  
## avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015  
## 2 8.2  
## 8 5.2  
## 9 4.7  
## 12 5.8  
## 13 8.0  
## 20 2.0  
## 27 7.1  
## 29 6.9  
## 40 3.5  
## 46 5.6  
## 51 4.1  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015  
## 2 NA  
## 8 NA  
## 9 NA  
## 12 NA  
## 13 NA  
## 20 NA  
## 27 NA  
## 29 NA  
## 40 NA  
## 46 NA  
## 51 NA  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016  
## 2 NA  
## 8 NA  
## 9 NA  
## 12 NA  
## 13 NA  
## 20 NA  
## 27 NA  
## 29 NA  
## 40 NA  
## 46 NA  
## 51 NA  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012  
## 2 1845  
## 8 2186  
## 9 209593  
## 12 39589  
## 13 27291  
## 20 8796  
## 27 541  
## 29 50969  
## 40 1265  
## 46 5248  
## 51 3049  
## total\_group\_market\_rebates\_2012  
## 2 708637  
## 8 727951  
## 9 5064210  
## 12 1551371  
## 13 2085935  
## 20 501240  
## 27 141882  
## 29 3189949  
## 40 18053  
## 46 126810  
## 51 1275555  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013  
## 2 0  
## 8 3176  
## 9 164023  
## 12 67722  
## 13 29289  
## 20 19542  
## 27 262  
## 29 53048  
## 40 710  
## 46 0  
## 51 2120  
## total\_group\_market\_rebates\_2013  
## 2 0  
## 8 242249  
## 9 11151522  
## 12 4889432  
## 13 1341917  
## 20 1845006  
## 27 6840  
## 29 3318456  
## 40 48696  
## 46 0  
## 51 795143  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014  
## 2 0  
## 8 12110  
## 9 41340  
## 12 1377  
## 13 0  
## 20 4449  
## 27 0  
## 29 24101  
## 40 0  
## 46 0  
## 51 484  
## total\_group\_market\_rebates\_2014  
## 2 0  
## 8 1470435  
## 9 14488017  
## 12 1395611  
## 13 0  
## 20 160821  
## 27 0  
## 29 3493603  
## 40 0  
## 46 0  
## 51 266734  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015  
## 2 0  
## 8 3805  
## 9 252618  
## 12 1273  
## 13 0  
## 20 0  
## 27 0  
## 29 28636  
## 40 0  
## 46 0  
## 51 0  
## total\_group\_market\_rebates\_2015 total\_group\_market\_rebates\_2012\_2015  
## 2 0 708637  
## 8 151507 2592142  
## 9 18040941 48744690  
## 12 1156997 8993411  
## 13 0 3427852  
## 20 0 2507067  
## 27 0 148722  
## 29 6175582 16177590  
## 40 0 66749  
## 46 0 126810  
## 51 0 2337432

individual\_market[!complete.cases(individual\_market),]

## state individuals\_with\_pre\_existing\_condition\_2009  
## 1 Alabama 2040458  
## 2 Alaska 318926  
## 3 Arizona 2794358  
## 4 Arkansas 1239180  
## 5 California 16133192  
## 6 Colorado 2250003  
## 7 Connecticut 1554628  
## 8 Delaware 383607  
## 9 District of Columbia 268134  
## 10 Florida 7838642  
## 11 Georgia 4323897  
## 13 Idaho 662319  
## 16 Iowa 1290303  
## 17 Kansas 1213671  
## 18 Kentucky 1894874  
## 19 Louisiana 1951886  
## 20 Maine 590266  
## 21 Maryland 2542844  
## 22 Massachusetts 2931068  
## 24 Minnesota 2318738  
## 26 Missouri 2601893  
## 27 Montana 426361  
## 29 Nevada 1157045  
## 31 New Jersey 3847727  
## 33 New York 8616234  
## 35 North Dakota 275556  
## 36 Ohio 5053131  
## 37 Oklahoma 1578794  
## 40 Rhode Island 462538  
## 41 South Carolina 1991315  
## 42 South Dakota 345932  
## 43 Tennessee 2764651  
## 44 Texas 10694840  
## 46 Vermont 280727  
## 47 Virginia 3491076  
## 48 Washington 2969739  
## 49 West Virginia 799920  
## 50 Wisconsin 2489279  
## 51 Wyoming 241133  
## individuals\_selecting\_a\_marketplace\_plan\_2016  
## 1 195055  
## 2 23029  
## 3 203066  
## 4 73648  
## 5 1575340  
## 6 150769  
## 7 116019  
## 8 28256  
## 9 22693  
## 10 1742819  
## 11 587845  
## 13 101073  
## 16 55089  
## 17 101555  
## 18 93666  
## 19 214148  
## 20 84059  
## 21 162177  
## 22 213883  
## 24 83507  
## 26 290201  
## 27 58114  
## 29 88145  
## 31 288573  
## 33 271964  
## 35 21604  
## 36 243715  
## 37 145329  
## 40 34670  
## 41 231849  
## 42 25999  
## 43 268867  
## 44 1306208  
## 46 29440  
## 47 421897  
## 48 200691  
## 49 37284  
## 50 239034  
## 51 23770  
## individuals\_with\_marketplace\_coverage\_q1\_2016  
## 1 165534  
## 2 17995  
## 3 179445  
## 4 63357  
## 5 1415428  
## 6 108311  
## 7 102917  
## 8 25379  
## 9 17666  
## 10 1531714  
## 11 478016  
## 13 94270  
## 16 48949  
## 17 89566  
## 18 74640  
## 19 184403  
## 20 75240  
## 21 135208  
## 22 207121  
## 24 74060  
## 26 252044  
## 27 51758  
## 29 79876  
## 31 249395  
## 33 224014  
## 35 20536  
## 36 212046  
## 37 130178  
## 40 35583  
## 41 204846  
## 42 24578  
## 43 231705  
## 44 1092650  
## 46 27883  
## 47 378838  
## 48 158245  
## 49 33235  
## 50 224208  
## 51 22076  
## individuals\_receiving\_tax\_credits\_q1\_2016  
## 1 152206  
## 2 16205  
## 3 124346  
## 4 56843  
## 5 1239893  
## 6 67062  
## 7 80759  
## 8 21467  
## 9 1224  
## 10 1428712  
## 11 427353  
## 13 82802  
## 16 42595  
## 17 75815  
## 18 56488  
## 19 170806  
## 20 63896  
## 21 100844  
## 22 157751  
## 24 47266  
## 26 225878  
## 27 44091  
## 29 71472  
## 31 205242  
## 33 123830  
## 35 17630  
## 36 174448  
## 37 113209  
## 40 30015  
## 41 186345  
## 42 22005  
## 43 203112  
## 44 913177  
## 46 19575  
## 47 319068  
## 48 110476  
## 49 29163  
## 50 190542  
## 51 20313  
## avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016  
## 1 310  
## 2 750  
## 3 230  
## 4 306  
## 5 309  
## 6 318  
## 7 357  
## 8 330  
## 9 183  
## 10 305  
## 11 291  
## 13 265  
## 16 307  
## 17 247  
## 18 258  
## 19 362  
## 20 342  
## 21 243  
## 22 190  
## 24 203  
## 26 315  
## 27 306  
## 29 268  
## 31 322  
## 33 178  
## 35 262  
## 36 250  
## 37 298  
## 40 250  
## 41 312  
## 42 307  
## 43 299  
## 44 271  
## 46 300  
## 47 276  
## 48 238  
## 49 388  
## 50 332  
## 51 459  
## individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016  
## 1 125424  
## 2 7500  
## 3 94463  
## 4 36134  
## 5 707671  
## 6 28929  
## 7 52132  
## 8 11146  
## 9 279  
## 10 1125850  
## 11 322348  
## 13 58781  
## 16 25677  
## 17 53034  
## 18 32186  
## 19 118597  
## 20 42880  
## 21 72175  
## 22 132721  
## 24 12128  
## 26 148033  
## 27 23479  
## 29 48736  
## 31 129277  
## 33 40544  
## 35 9199  
## 36 95312  
## 37 81053  
## 40 21270  
## 41 150030  
## 42 15108  
## 43 138272  
## 44 646415  
## 46 9751  
## 47 222233  
## 48 66083  
## 49 17414  
## 50 123307  
## 51 12235  
## average\_number\_of\_marketplace\_plans\_available\_2017  
## 1 6  
## 2 5  
## 3 4  
## 4 24  
## 5 30  
## 6 NA  
## 7 17  
## 8 19  
## 9 18  
## 10 55  
## 11 32  
## 13 NA  
## 16 15  
## 17 13  
## 18 11  
## 19 19  
## 20 25  
## 21 NA  
## 22 53  
## 24 18  
## 26 17  
## 27 21  
## 29 26  
## 31 19  
## 33 71  
## 35 19  
## 36 45  
## 37 13  
## 40 NA  
## 41 25  
## 42 17  
## 43 7  
## 44 26  
## 46 NA  
## 47 34  
## 48 NA  
## 49 13  
## 50 44  
## 51 28  
## marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017  
## 1 0.89  
## 2 0.79  
## 3 0.74  
## 4 0.52  
## 5 NA  
## 6 NA  
## 7 NA  
## 8 0.55  
## 9 NA  
## 10 0.80  
## 11 0.76  
## 13 NA  
## 16 0.65  
## 17 0.69  
## 18 NA  
## 19 0.81  
## 20 0.60  
## 21 NA  
## 22 NA  
## 24 NA  
## 26 0.73  
## 27 0.77  
## 29 0.70  
## 31 0.54  
## 33 NA  
## 35 0.71  
## 36 0.51  
## 37 0.84  
## 40 NA  
## 41 0.68  
## 42 0.79  
## 43 0.81  
## 44 0.73  
## 46 NA  
## 47 0.67  
## 48 NA  
## 49 0.63  
## 50 0.63  
## 51 0.68  
## marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017  
## 1 0.90  
## 2 0.82  
## 3 0.78  
## 4 0.62  
## 5 NA  
## 6 NA  
## 7 NA  
## 8 0.63  
## 9 NA  
## 10 0.84  
## 11 0.81  
## 13 NA  
## 16 0.71  
## 17 0.74  
## 18 NA  
## 19 0.84  
## 20 0.68  
## 21 NA  
## 22 NA  
## 24 NA  
## 26 0.78  
## 27 0.80  
## 29 0.76  
## 31 0.61  
## 33 NA  
## 35 0.77  
## 36 0.60  
## 37 0.86  
## 40 NA  
## 41 0.74  
## 42 0.83  
## 43 0.83  
## 44 0.78  
## 46 NA  
## 47 0.73  
## 48 NA  
## 49 0.69  
## 50 0.69  
## 51 0.74  
## purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016  
## 1 33000  
## 2 5000  
## 3 33000  
## 4 29000  
## 5 313000  
## 6 52000  
## 7 15000  
## 8 5000  
## 9 2000  
## 10 153000  
## 11 95000  
## 13 15000  
## 16 41000  
## 17 28000  
## 18 17000  
## 19 34000  
## 20 10000  
## 21 31000  
## 22 22000  
## 24 43000  
## 26 83000  
## 27 14000  
## 29 27000  
## 31 44000  
## 33 68000  
## 35 4000  
## 36 64000  
## 37 33000  
## 40 4000  
## 41 21000  
## 42 17000  
## 43 79000  
## 44 252000  
## 46 1000  
## 47 56000  
## 48 53000  
## 49 15000  
## 50 51000  
## 51 5000  
## rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014  
## 1 1000000  
## 2 NA  
## 3 4179000  
## 4 9187892  
## 5 11697197  
## 6 8580311  
## 7 1000000  
## 8 2178976  
## 9 4803324  
## 10 NA  
## 11 NA  
## 13 NA  
## 16 NA  
## 17 4130296  
## 18 7977522  
## 19 3000000  
## 20 4800098  
## 21 9035636  
## 22 8959049  
## 24 8254221  
## 26 1000000  
## 27 1000000  
## 29 6138972  
## 31 6325261  
## 33 9998743  
## 35 1000000  
## 36 5091507  
## 37 NA  
## 40 8636923  
## 41 1000000  
## 42 4000923  
## 43 4979002  
## 44 5326798  
## 46 5983045  
## 47 1000000  
## 48 5586169  
## 49 4000000  
## 50 6137844  
## 51 NA  
## insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016  
## 1 NA  
## 2 629841  
## 3 NA  
## 4 NA  
## 5 1844585  
## 6 1328508  
## 7 NA  
## 8 NA  
## 9 1138052  
## 10 NA  
## 11 NA  
## 13 NA  
## 16 NA  
## 17 NA  
## 18 873652  
## 19 NA  
## 20 NA  
## 21 249070  
## 22 1206525  
## 24 1160021  
## 26 NA  
## 27 NA  
## 29 NA  
## 31 NA  
## 33 1244446  
## 35 NA  
## 36 NA  
## 37 NA  
## 40 1090263  
## 41 NA  
## 42 NA  
## 43 NA  
## 44 NA  
## 46 NA  
## 47 NA  
## 48 528441  
## 49 NA  
## 50 NA  
## 51 NA

states[!complete.cases(states),]

## State Uninsured.Rate..2010. Uninsured.Rate..2015.  
## 7 Connecticut 0.091 0.060  
## 20 Maine 0.101 0.084  
## 52 United States 0.155 0.094  
## Uninsured.Rate.Change..2010.2015.  
## 7 -0.031  
## 20 -0.017  
## 52 0.061  
## Health.Insurance.Coverage.Change..2010.2015.  
## 7 110000  
## 20 22000  
## 52 19304000  
## Employer.Health.Insurance.Coverage..2015.  
## 7 2148000  
## 20 702000  
## 52 172292000  
## Marketplace.Health.Insurance.Coverage..2016.  
## 7 102917  
## 20 75240  
## 52 11081330  
## Marketplace.Tax.Credits..2016. Average.Monthly.Tax.Credit..2016.  
## 7 80759 357  
## 20 63896 342  
## 52 9389609 291  
## State.Medicaid.Expansion..2016. Medicaid.Enrollment..2013.  
## 7 TRUE NA  
## 20 FALSE NA  
## 52 NA 56392477  
## Medicaid.Enrollment..2016. Medicaid.Enrollment.Change..2013.2016.  
## 7 761137 NA  
## 20 273160 NA  
## 52 73532931 16106157  
## Medicare.Enrollment..2016.  
## 7 644136  
## 20 315160  
## 52 57149984

Create files to omit rows with missing data

#Create files to omit rows with na  
employer\_coverage <- na.omit(employer\_coverage)  
individual\_market <- na.omit(individual\_market)  
states <- na.omit(states)

Retest for missing or na values

sum(is.na((employer\_coverage)))

## [1] 0

sum(is.na((individual\_market)))

## [1] 0

sum(is.na((medicare)))

## [1] 0

sum(is.na((states)))

## [1] 0

### Show what the final clean data set looks like

head(employer\_coverage)

## state people\_with\_employer\_coverage\_2015  
## 1 Alabama 2545000  
## 3 Arizona 3288000  
## 4 Arkansas 1365000  
## 5 California 19552000  
## 6 Colorado 2949000  
## 7 Connecticut 2148000  
## gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013  
## 1 35000  
## 3 50000  
## 4 21000  
## 5 294000  
## 6 40000  
## 7 25000  
## total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010  
## 1 1566000  
## 3 2091000  
## 4 865000  
## 5 12092000  
## 6 1902000  
## 7 1386000  
## children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 1 396000  
## 3 570000  
## 4 219000  
## 5 3255000  
## 6 521000  
## 7 367000  
## adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 1 561000  
## 3 752000  
## 4 313000  
## 5 4389000  
## 6 685000  
## 7 494000  
## adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 1 609000  
## 3 769000  
## 4 333000  
## 5 4448000  
## 6 696000  
## 7 525000  
## total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 2140837  
## 3 2726206  
## 4 1102338  
## 5 15867909  
## 6 2519638  
## 7 1819938  
## kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 422895  
## 3 598585  
## 4 225176  
## 5 3351780  
## 6 556491  
## 7 364693  
## males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 831232  
## 3 1066492  
## 4 430226  
## 5 6191627  
## 6 972911  
## 7 708801  
## females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 1 886709  
## 3 1061129  
## 4 446936  
## 5 6324503  
## 6 990235  
## 7 746444  
## avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010  
## 1 7.1  
## 3 7.4  
## 4 6.4  
## 5 8.3  
## 6 7.0  
## 7 7.4  
## avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015  
## 1 5.2  
## 3 4.2  
## 4 3.8  
## 5 5.5  
## 6 4.8  
## 7 4.2  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015  
## 1 1500  
## 3 2900  
## 4 1900  
## 5 2500  
## 6 1900  
## 7 3000  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016  
## 1 2200  
## 3 3800  
## 4 2400  
## 5 3600  
## 6 2600  
## 7 4000  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012  
## 1 0  
## 3 341797  
## 4 110844  
## 5 1088504  
## 6 112067  
## 7 21613  
## total\_group\_market\_rebates\_2012  
## 1 0  
## 3 16179486  
## 4 2629919  
## 5 47272420  
## 6 10189712  
## 7 4266585  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013  
## 1 0  
## 3 256536  
## 4 44206  
## 5 422403  
## 6 14926  
## 7 31734  
## total\_group\_market\_rebates\_2013  
## 1 0  
## 3 8248311  
## 4 4519181  
## 5 8696667  
## 6 1474433  
## 7 2638239  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014  
## 1 0  
## 3 238461  
## 4 40087  
## 5 230786  
## 6 97387  
## 7 22166  
## total\_group\_market\_rebates\_2014  
## 1 0  
## 3 8301175  
## 4 5143882  
## 5 32235960  
## 6 4918285  
## 7 1834954  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015  
## 1 0  
## 3 11492  
## 4 44160  
## 5 287077  
## 6 5320  
## 7 0  
## total\_group\_market\_rebates\_2015 total\_group\_market\_rebates\_2012\_2015  
## 1 0 0  
## 3 4142421 36871393  
## 4 3101489 15394471  
## 5 36705696 124910743  
## 6 1588937 18171367  
## 7 0 8739778

tail(employer\_coverage)

## state people\_with\_employer\_coverage\_2015  
## 44 Texas 13709000  
## 45 Utah 1897000  
## 47 Virginia 4850000  
## 48 Washington 3986000  
## 49 West Virginia 976000  
## 50 Wisconsin 3521000  
## gained\_coverage\_by\_staying\_on\_parents\_plan\_until\_age\_26\_2013  
## 44 205000  
## 45 25000  
## 47 59000  
## 48 50000  
## 49 12000  
## 50 41000  
## total\_with\_lifetime\_limit\_on\_health\_benefits\_pre\_aca\_2008\_2010  
## 44 7536000  
## 45 1183000  
## 47 2974000  
## 48 2427000  
## 49 581000  
## 50 2142000  
## children\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 44 2094000  
## 45 411000  
## 47 817000  
## 48 580000  
## 49 147000  
## 50 580000  
## adult\_males\_with\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 44 2671000  
## 45 385000  
## 47 1036000  
## 48 910000  
## 49 215000  
## 50 771000  
## adult\_females\_w\_lifetime\_limit\_on\_benefits\_pre\_aca\_2008\_2010  
## 44 2771000  
## 45 387000  
## 47 1121000  
## 48 937000  
## 49 219000  
## 50 791000  
## total\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 44 10278005  
## 45 1509455  
## 47 3902716  
## 48 3079369  
## 49 772905  
## 50 2804258  
## kids\_w\_priv\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 44 2258657  
## 45 431216  
## 47 847534  
## 48 596597  
## 49 152226  
## 50 573028  
## males\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 44 3990134  
## 45 538759  
## 47 1467520  
## 48 1224572  
## 49 304602  
## 50 1107770  
## females\_w\_pri\_cov\_no\_cost\_sharing\_for\_prev\_serv\_2013\_2015  
## 44 4029215  
## 45 539479  
## 47 1587663  
## 48 1258201  
## 49 316077  
## 50 1123460  
## avg\_annual\_growth\_in\_fam\_premiums\_for\_emp\_cov\_2000\_2010  
## 44 8.1  
## 45 7.2  
## 47 7.6  
## 48 8.1  
## 49 7.6  
## 50 7.4  
## avg\_annual\_growth\_family\_prem\_for\_emp\_cov\_2010\_2015  
## 44 3.5  
## 45 4.9  
## 47 4.8  
## 48 3.2  
## 49 5.2  
## 50 4.0  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2015  
## 44 4300  
## 45 1900  
## 47 2500  
## 48 4300  
## 49 2100  
## 50 3100  
## family\_emp\_prem\_savings\_comp\_cont\_growth\_pre\_aca\_rate\_2016  
## 44 5400  
## 45 2600  
## 47 3400  
## 48 5500  
## 49 3000  
## 50 4100  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2012  
## 44 100975  
## 45 89203  
## 47 216242  
## 48 381  
## 49 1954  
## 50 99129  
## total\_group\_market\_rebates\_2012  
## 44 5435404  
## 45 3850128  
## 47 10272687  
## 48 20550  
## 49 271978  
## 50 2802562  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2013  
## 44 42097  
## 45 93127  
## 47 69062  
## 48 0  
## 49 1186  
## 50 0  
## total\_group\_market\_rebates\_2013  
## 44 1870997  
## 45 2486251  
## 47 8085302  
## 48 0  
## 49 285783  
## 50 0  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2014  
## 44 26009  
## 45 703  
## 47 163018  
## 48 31694  
## 49 457  
## 50 2033  
## total\_group\_market\_rebates\_2014  
## 44 5845356  
## 45 337213  
## 47 10625792  
## 48 129860  
## 49 106185  
## 50 201289  
## total\_group\_market\_consumers\_benefiting\_from\_mlr\_rebates\_2015  
## 44 18925  
## 45 1172  
## 47 246593  
## 48 2897  
## 49 7055  
## 50 0  
## total\_group\_market\_rebates\_2015 total\_group\_market\_rebates\_2012\_2015  
## 44 6930691 20082448  
## 45 201132 6874724  
## 47 15982185 44965966  
## 48 441587 591997  
## 49 737553 1401499  
## 50 0 3003851

head(individual\_market)

## state individuals\_with\_pre\_existing\_condition\_2009  
## 12 Hawaii 560494  
## 14 Illinois 5635622  
## 15 Indiana 2796375  
## 23 Michigan 4394173  
## 25 Mississippi 1261721  
## 28 Nebraska 767878  
## individuals\_selecting\_a\_marketplace\_plan\_2016  
## 12 14564  
## 14 388179  
## 15 196242  
## 23 345813  
## 25 108672  
## 28 87835  
## individuals\_with\_marketplace\_coverage\_q1\_2016  
## 12 13313  
## 14 335243  
## 15 168884  
## 23 313123  
## 25 77747  
## 28 80213  
## individuals\_receiving\_tax\_credits\_q1\_2016  
## 12 10958  
## 14 259701  
## 15 139437  
## 23 275080  
## 25 73246  
## 28 72091  
## avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016  
## 12 270  
## 14 237  
## 15 259  
## 23 233  
## 25 306  
## 28 296  
## individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016  
## 12 8067  
## 14 156469  
## 15 77251  
## 23 164725  
## 25 60354  
## 28 41950  
## average\_number\_of\_marketplace\_plans\_available\_2017  
## 12 22  
## 14 29  
## 15 44  
## 23 62  
## 25 18  
## 28 13  
## marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017  
## 12 0.71  
## 14 0.53  
## 15 0.48  
## 23 0.65  
## 25 0.81  
## 28 0.77  
## marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017  
## 12 0.76  
## 14 0.60  
## 15 0.56  
## 23 0.73  
## 25 0.85  
## 28 0.82  
## purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016  
## 12 7000  
## 14 130000  
## 15 45000  
## 23 62000  
## 25 22000  
## 28 14000  
## rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014  
## 12 8202387  
## 14 4531085  
## 15 6069752  
## 23 9544541  
## 25 4783208  
## 28 3000000  
## insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016  
## 12 1210907  
## 14 1377567  
## 15 1297729  
## 23 1024302  
## 25 1152710  
## 28 1068804

tail(individual\_market)

## state individuals\_with\_pre\_existing\_condition\_2009  
## 30 New Hampshire 597050  
## 32 New Mexico 861621  
## 34 North Carolina 4099922  
## 38 Oregon 1692205  
## 39 Pennsylvania 5489162  
## 45 Utah 1150918  
## individuals\_selecting\_a\_marketplace\_plan\_2016  
## 30 55183  
## 32 54865  
## 34 613487  
## 38 147109  
## 39 439238  
## 45 175637  
## individuals\_with\_marketplace\_coverage\_q1\_2016  
## 30 49114  
## 32 47497  
## 34 545354  
## 38 131167  
## 39 412347  
## 45 164415  
## individuals\_receiving\_tax\_credits\_q1\_2016  
## 30 31151  
## 32 32703  
## 34 499178  
## 38 95507  
## 39 321345  
## 45 145288  
## avg\_monthly\_tax\_credit\_for\_those\_receiving\_credits\_q1\_2016  
## 30 261  
## 32 212  
## 34 401  
## 38 253  
## 39 248  
## 45 187  
## individuals\_receiving\_cost\_sharing\_reductions\_q1\_2016  
## 30 17376  
## 32 22655  
## 34 360045  
## 38 52960  
## 39 227304  
## 45 106589  
## average\_number\_of\_marketplace\_plans\_available\_2017  
## 30 32  
## 32 20  
## 34 10  
## 38 28  
## 39 12  
## 45 22  
## marketplace\_consumers\_who\_could\_select\_plan\_for\_75\_2017  
## 30 0.42  
## 32 0.56  
## 34 0.82  
## 38 0.56  
## 39 0.71  
## 45 0.76  
## marketplace\_consumers\_who\_could\_select\_a\_plan\_for\_100\_2017  
## 30 0.49  
## 32 0.65  
## 34 0.85  
## 38 0.62  
## 39 0.75  
## 45 0.82  
## purchasing\_off\_market\_who\_could\_quality\_for\_tax\_credits\_2016  
## 30 3000  
## 32 8000  
## 34 138000  
## 38 26000  
## 39 111000  
## 45 56000  
## rate\_review\_funds\_awarded\_to\_the\_state\_2010\_2014  
## 30 8764186  
## 32 7204929  
## 34 4984080  
## 38 9814586  
## 39 5312084  
## 45 8750077  
## insurance\_enforcement\_consumer\_protections\_grant\_awards\_2016  
## 30 1120164.0  
## 32 1159064.0  
## 34 1114013.8  
## 38 1245919.0  
## 39 1486251.0  
## 45 996216.8

head(medicare)

## state medicare\_enrollment\_sept\_2016  
## 1 Alabama 989855  
## 2 Alaska 88966  
## 3 Arizona 1175624  
## 4 Arkansas 606146  
## 5 California 5829777  
## 6 Colorado 820234  
## medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015  
## 1 90556  
## 2 3094  
## 3 96954  
## 4 40658  
## 5 419078  
## 6 59459  
## total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015  
## 1 97330073  
## 2 3184420  
## 3 93694466  
## 4 36436080  
## 5 437630655  
## 6 58449048  
## average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015  
## 1 1075  
## 2 1029  
## 3 966  
## 4 896  
## 5 1044  
## 6 983  
## part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 1 531567  
## 2 46876  
## 3 481230  
## 4 337214  
## 5 2202117  
## 6 323128  
## share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 1 0.742  
## 2 0.587  
## 3 0.703  
## 4 0.712  
## 5 0.685  
## 6 0.676  
## change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015  
## 1 -5.8  
## 2 -5.5  
## 3 -10.8  
## 4 -6.2  
## 5 -5.7  
## 6 -9.2  
## avoided\_readmissions\_2015 number\_of\_accountable\_care\_organizations\_2016  
## 1 1503.120 9  
## 2 78.330 1  
## 3 2270.126 10  
## 4 993.474 11  
## 5 5580.208 29  
## 6 1098.724 7

tail(medicare)

## state medicare\_enrollment\_sept\_2016  
## 46 Vermont 136021  
## 47 Virginia 1392261  
## 48 Washington 1238649  
## 49 West Virginia 423500  
## 50 Wisconsin 1084854  
## 51 Wyoming 99128  
## medicare\_beneficiaries\_benefitting\_from\_donut\_hole\_savings\_2015  
## 46 10955  
## 47 114138  
## 48 74902  
## 49 45280  
## 50 90303  
## 51 8008  
## total\_medicare\_beneficiary\_savings\_from\_donut\_hole\_2015  
## 46 12077364  
## 47 115809752  
## 48 73272041  
## 49 54194138  
## 50 93517959  
## 51 7634708  
## average\_per\_medicare\_beneficiary\_donut\_hole\_savings\_2015  
## 46 1102  
## 47 1015  
## 48 978  
## 49 1197  
## 50 1036  
## 51 953  
## part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 46 87184  
## 47 813642  
## 48 543203  
## 49 213916  
## 50 481012  
## 51 56898  
## share\_of\_part\_b\_beneficiaries\_using\_free\_preventive\_services\_2015  
## 46 0.728  
## 47 0.762  
## 48 0.681  
## 49 0.707  
## 50 0.751  
## 51 0.621  
## change\_in\_hospital\_readmission\_rates\_among\_medicare\_beneficiaries\_2010\_2015  
## 46 0.7  
## 47 -6.3  
## 48 -7.2  
## 49 -6.5  
## 50 -7.1  
## 51 -6.0  
## avoided\_readmissions\_2015 number\_of\_accountable\_care\_organizations\_2016  
## 46 -21.000 3  
## 47 2301.950 25  
## 48 1388.001 6  
## 49 777.370 11  
## 50 1372.744 13  
## 51 109.538 3

head(states)

## State Uninsured.Rate..2010. Uninsured.Rate..2015.  
## 1 Alabama 0.146 0.101  
## 2 Alaska 0.199 0.149  
## 3 Arizona 0.169 0.108  
## 4 Arkansas 0.175 0.095  
## 5 California 0.185 0.086  
## 6 Colorado 0.159 0.081  
## Uninsured.Rate.Change..2010.2015.  
## 1 -0.045  
## 2 -0.050  
## 3 -0.061  
## 4 -0.080  
## 5 -0.099  
## 6 -0.078  
## Health.Insurance.Coverage.Change..2010.2015.  
## 1 215000  
## 2 36000  
## 3 410000  
## 4 234000  
## 5 3826000  
## 6 419000  
## Employer.Health.Insurance.Coverage..2015.  
## 1 2545000  
## 2 390000  
## 3 3288000  
## 4 1365000  
## 5 19552000  
## 6 2949000  
## Marketplace.Health.Insurance.Coverage..2016.  
## 1 165534  
## 2 17995  
## 3 179445  
## 4 63357  
## 5 1415428  
## 6 108311  
## Marketplace.Tax.Credits..2016. Average.Monthly.Tax.Credit..2016.  
## 1 152206 310  
## 2 16205 750  
## 3 124346 230  
## 4 56843 306  
## 5 1239893 309  
## 6 67062 318  
## State.Medicaid.Expansion..2016. Medicaid.Enrollment..2013.  
## 1 FALSE 799176  
## 2 TRUE 122334  
## 3 TRUE 1201770  
## 4 TRUE 556851  
## 5 TRUE 7755381  
## 6 TRUE 783420  
## Medicaid.Enrollment..2016. Medicaid.Enrollment.Change..2013.2016.  
## 1 910775 111599  
## 2 166625 44291  
## 3 1716198 514428  
## 4 920194 363343  
## 5 11843081 4087700  
## 6 1375264 591844  
## Medicare.Enrollment..2016.  
## 1 989855  
## 2 88966  
## 3 1175624  
## 4 606146  
## 5 5829777  
## 6 820234

tail(states)

## State Uninsured.Rate..2010. Uninsured.Rate..2015.  
## 46 Vermont 0.080 0.038  
## 47 Virginia 0.131 0.091  
## 48 Washington 0.142 0.066  
## 49 West Virginia 0.146 0.060  
## 50 Wisconsin 0.094 0.057  
## 51 Wyoming 0.149 0.115  
## Uninsured.Rate.Change..2010.2015.  
## 46 -0.042  
## 47 -0.040  
## 48 -0.076  
## 49 -0.086  
## 50 -0.037  
## 51 -0.034  
## Health.Insurance.Coverage.Change..2010.2015.  
## 46 26000  
## 47 327000  
## 48 537000  
## 49 156000  
## 50 211000  
## 51 20000  
## Employer.Health.Insurance.Coverage..2015.  
## 46 345000  
## 47 4850000  
## 48 3986000  
## 49 976000  
## 50 3521000  
## 51 335000  
## Marketplace.Health.Insurance.Coverage..2016.  
## 46 27883  
## 47 378838  
## 48 158245  
## 49 33235  
## 50 224208  
## 51 22076  
## Marketplace.Tax.Credits..2016. Average.Monthly.Tax.Credit..2016.  
## 46 19575 300  
## 47 319068 276  
## 48 110476 238  
## 49 29163 388  
## 50 190542 332  
## 51 20313 459  
## State.Medicaid.Expansion..2016. Medicaid.Enrollment..2013.  
## 46 TRUE 161081  
## 47 FALSE 935434  
## 48 TRUE 1117576  
## 49 TRUE 354544  
## 50 FALSE 985531  
## 51 FALSE 67518  
## Medicaid.Enrollment..2016. Medicaid.Enrollment.Change..2013.2016.  
## 46 175597 14516  
## 47 988821 53387  
## 48 1788536 670960  
## 49 575645 221101  
## 50 1046897 61366  
## 51 63583 -3935  
## Medicare.Enrollment..2016.  
## 46 136021  
## 47 1392261  
## 48 1238649  
## 49 423500  
## 50 1084854  
## 51 99128

### What do I not know how to do right now?

What I don’t know at this point is how to change or format variables once they are imported. I have been struggling to format dates the way I want to view them. I’ve also been struggling to remove currency or percentage characters. To work around this, I make sure the data is in a the format I want before importing. I’ve found some samples of code, but haven’t always been successful getting them to work. I’ve also been struggling with outliers, but feel that with these data sets, the outliers are probably valid and should be included in the data. I do not know how to rescale or change the values on the density of the scatterplots and histograms. I’ve researched this, but have been unsuccessful to find a good solution.